

THIN BURIED OXIDES BY LOW-DOSE OXYGEN IMPLANTATION INTO MODIFIED SILICON

ABSTRACT OF THE DISCLOSURE

A method of fabricating silicon-on-insulators (SOIs) having a thin, but uniform buried oxide region beneath a Si-containing over-layer is provided. The SOI structures are fabricated by first modifying a surface of a Si-containing substrate to contain a large concentration of vacancies or voids. Next, a Si-containing layer is typically, but not always, formed atop the substrate and then oxygen ions are implanted into the structure utilizing a low-oxygen dose. The structure is then annealed to convert the implanted oxygen ions into a thin, but uniform thermal buried oxide region.